Abstract:

The present invention discloses an XRD means for identifying the content of a volume of interest (VOI) and a method thereof. A remote XRD means is comprised inter alia of a plurality of x-ray sources target toward the VOI. A plurality of x-ray detectors adapted to receive diffracted X-rays. A processor adapted to measure the diffracted x-ray patterns. A database comprising records of patterns parameters; and, an alerting means adapted for identifying material as one of the predetermined groups in the record. This invention also discloses a method of acquiring XRD image of a material in a VOI, comprised of receiving VOI coordinates; irradiating the material in the VOI; acquiring, extracting and converting of XRD patterns of the VOI to standard powder X-ray diffraction spectrum; matching records in a database for material identification; and alerting when the material is in a matching predetermined record.